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Remarks:

Applicant kindly submits the following remarks.

The claims have been rejected generally as being unpatentable over *Watanabe* (6,777,832) in view of *Mishler* (6,495,935), and *Horng* (6,040649), and further in view of *Shizuka* (4,506,180), and further in view of *Miyake* (4,633,112). The claims have been amended to more distinctly and clearly differentiate the present invention from the cited art. The claims recite as follows:

1. a *unitary* bearing rail structure, that is, one wholly cut out of a single block of material (see e.g., specification, paragraph 1026);
2. the unitary bearing rail structure exhibits outer edge perimeters that form the bearing rail surfaces (see e.g., specification, FIG 3, 2401, 2402, 2403);
3. the unitary bearing rail structure exhibits a shallow channel with magnets disposed on the base of the channel; the channel depth is about equal to the thickness of the magnets (see e.g., specification, FIG 4, FIG 8)
4. the unitary bearing rail structure exhibits an outer edge perimeter (2403) with a height that is substantially less than the width of the channel (see e.g., specification, FIG 5, FIG 8);
5. the connecting structures are adapted to mount a linear motor coil assembly (2500) *above* the channel when the bearings are positioned to roll against the bearing rail surfaces (see e.g., specification, FIG 5, FIG 8).

Thus, the claims as now amended recite a combination of features that is not taught or suggested by the cited art. *Watanabe* discloses a channel formed of a unitary material (20). The magnets (21) are disposed on the sides, not the base, of the channel. Bearing rail surfaces (32) are added to the channel structure (20). *Watanabe* does not disclose a unitary structure with bearing rail surfaces formed by perimeter surfaces of the unitary structure itself. In contrast to *Watanabe*, the claims recite a unitary structure that provides both the channel and the bearing rail surfaces. Nor does *Watanabe* disclose a shallow channel exhibiting a depth about equal to the thickness of the magnets. Nor does *Watanabe* disclose mounting the linear motor coil assembly *above* the channel. Thus, *Watanabe* does not disclose features 1 through 5 above.

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Mishler discloses a channel formed by parts (2, 52, 20). Bearing rail surfaces 30 are added to the channel structure. Thus, *Mishler* does not disclose a unitary structure forming a shallow channel and with bearing rail surfaces formed by perimeter surfaces of the unitary structure itself. Nor does *Mishler* disclose a shallow channel exhibiting a depth about equal to the thickness of the magnets. Nor does *Mishler* disclose mounting the linear motor coil assembly *above* the channel. Thus, *Mishler* does not disclose at least features 1 through 3 and 5 above.

The present invention achieves great economy. The material required to make the bearing rail structure is minimal compared to the cited art, achieving less space, less weight, and less cost. Manufacture of the bearing rail structure is simple, requiring no assembly. The *unitary* bearing rail structure serves dual purposes: (1) to provide a *shallow* channel with a base for the magnets, and (2) to provide bearing rail surfaces against which bearings roll. Combining these two functions into one unitary piece produces a more modular design with a much lower profile. (See specification, FIG 2).

The Examiner cites *Horng* for the proposition that a unitary part can sometimes be cast to replace a combination of assembled parts. Disclosure of this general engineering fact does not disclose making a unitary part that combines a low profile magnet channel with low profile bearing surfaces in a linear motor.

The Examiner cites *Shizuka* for the proposition that there are different rates of thermal expansion for different metallic compounds. *Shizuka* shows one way of accommodating thermal expansion of one metal with respect to another. The Examiner cites *Miyake* which shows adjusting bolts to adjust the position of a drive shaft of a rotary motor relative to the motor casing. But, neither *Shizuka* nor *Miyake* disclose accommodating the thermal expansion of a structure connecting a linear motor coil assembly to bearing block assemblies. Further, these grounds for rejection are rendered moot in light of the present amendments to the claims.

The Examiner cites *Miyamoto* (6,191,507). However, the given patent number is to a patent that is not to *Miyamoto* and appears to be irrelevant. Applicant believes an